

Evaluation of Penetration of Electronic Tools for Pedagogical Purposes in Nigerian Universities Compared to British Universities

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Abstract

E-learning tools have become important for teaching and learning in universities all over the world. The rate of penetration of these tools into teaching and learning environment in developed and developing countries are quite different. This paper compares the availability of these tools in universities in a developed country and universities in a developing country. This paper will aim to bring to fore the low penetration of e-learning tools in developing countries like Nigeria. Ten universities are picked at random five in the United Kingdom and five in Nigeria. E-learning tools in the countries are then compared to evaluate the rate of appreciation and penetration.

Keywords: E-learning tools; Universities; Penetration; Evaluate; Pedagogical

Introduction

The acquisition or dissemination of Knowledge needs to be effectively done so that the recipient can have a wholesome experience. A wholesome experience can be elusive without communication. The electronic tools used for learning (hereafter referred to as E-learning tools) make communication easier. E-learning includes all forms of electronically supported learning and teaching. The information and communication systems, whether networked learning or not, serve as specific media to implement the learning process [1].

Efficient use of E-learning tools for acquisition, storage, transfer, retrieval, application, and visualization of learning materials often distinguish successful learning environment from the unsuccessful ones. The ability to obtain, assimilate, and apply the right knowledge effectively will become a key skill in the next century. Learning is the key to achieving our full potential. Our survival in the 21st century as individuals, organizations, and nations will depend upon our capacity to learn and the application of what we learn to our daily lives [1].

Research Method

The use of ICT in Nigeria became well known during the late 1990s at the advent of internet facilities in the country for the first time. However, Britain had been using the internet long before the 90s. In order to know the existing e-learning tools in Nigerian universities and then compare with that of British universities, this research work was conducted in Nigeria and Britain. Ten universities were selected at random, five universities in each country. The Nigerian Universities are Ekiti State University (EKSU), Afe Babalola University (ABUAD), Obafemi Awolowo University (OAU), Ladoke Akintola, University of Technology (LAUTECH) and Ahmadu Bello University (ABU) while the British universities include, Teesside University (TU), University of Liverpool (UL), University of Glasgow (UG), University of Aberdeen (UA) and University of East London (UE). The universities are then paired, that is a Nigerian university and a British university so that a comparison can be done.

Questionnaires were distributed in all these schools and the results collated. Schools like Teesside University, University of Liverpool, University of East London, Afe Babalola University and Ekiti State University, were actually visited. Two parameters would be compared: availability and percentage of students that have access. Identified three major types of e-learning tools: curriculum tools, digital library tools and teaching aid tools. All e-learning tools fall under one of these major

categories [2]. Some e-learning tools are picked under each category and their deployment and percentage of students' access are then compared.

E-Learning Tools

E-learning is an education via the Internet, network, standalone computer or other electronic devices. E-learning is basically the network-enabled transfer of skills and knowledge. E-learning refers to using electronic applications and processes to learn. E-learning applications and processes include Web-based learning, Computer-based learning, virtual classrooms and digital collaboration. E-learning is when content is delivered via the Internet, intranet/extranet, audio or video tape, satellite TV, and CD-ROM [1].

Before analysing the access of students to the E-learning tools, the most important part to be considered and analysed is the access of students to computers and the internet. Apart from individual computers, universities should make provisions for computers. In the UK universities, computers are made available in the library and in the laboratories. All students in these universities have access to computers always. It should be noted that not all students will use the computer systems at the same time but students' response shows that they have access to computers when needed. In addition to this, these computers hold propriety software's that may be too heavy or expensive for personal computers. In addition to provision of computers, another necessity is the provision of internet access. UK universities have WiFi available all over campus for personal computers and computers in laboratories and library also have internet facilities.

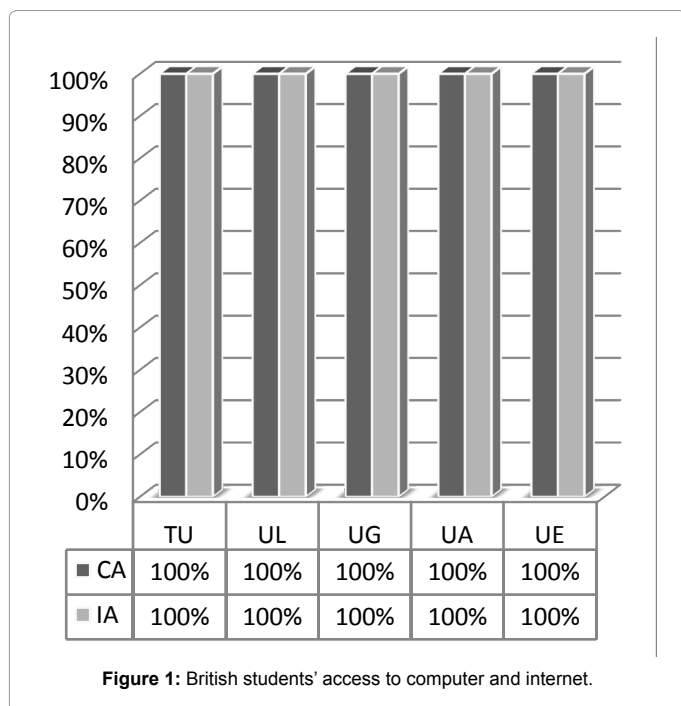
However the case is not the same in Nigerian universities. While access to computers are limited to very few computers, those few computers do not have licensed software's and hardly have software's necessary for simulation and analysis. Internet service exist in some cases but students have to pay extra amount of money to have access. The graph below shows the percentage of access to computers and also percent of access to internet (Figures 1 and 2).

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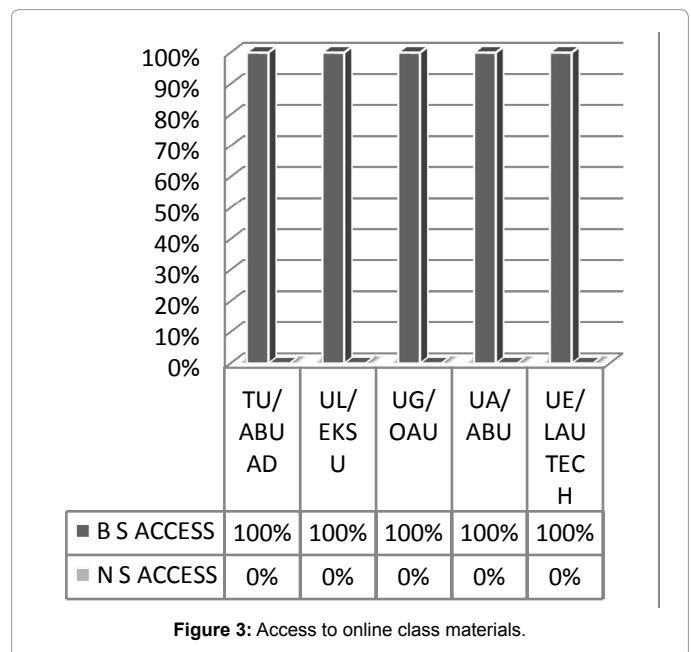
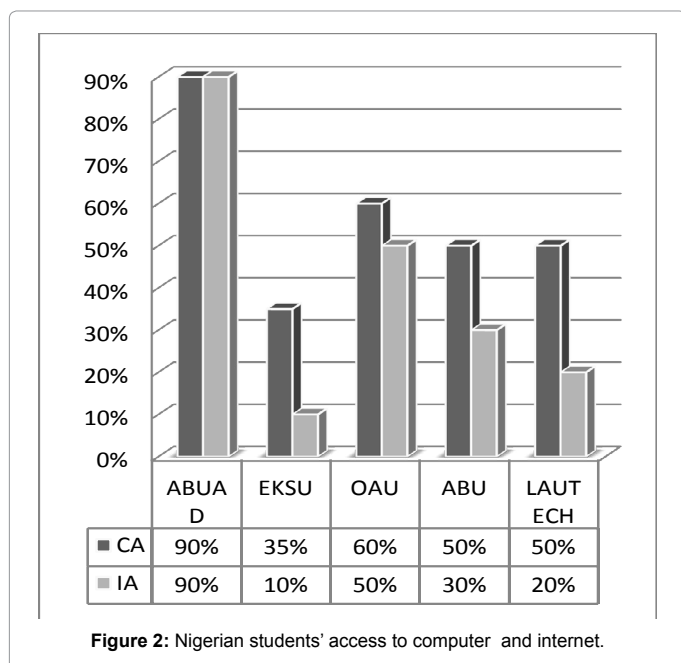
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make provisions for online collaboration between students and lecturers and among students. Online collaboration provides opportunity for students and lecturers to leave questions and comments that others can later view to further enhance their knowledge. The Blackboard also provides the platform for instructors to leave lecture notes, assignments and other materials available to students. UK students have access to this platform and can easily download notes, supplementary notes as well as view what other students think about an assignment.

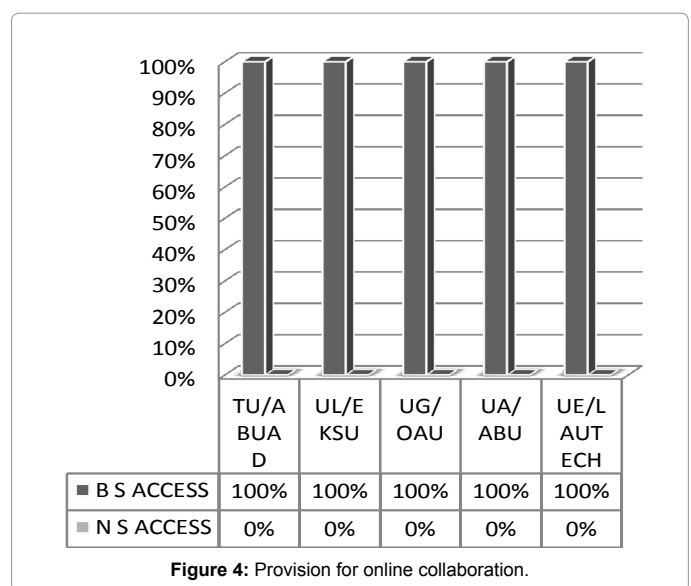
Nigerian universities do not have such. The most some universities have like OAU is an e-portal that does not provide for online collaboration or even class materials. Figure 3 shows the percentage of access to online materials between British universities (B S) and Nigerian universities (N S) while Figure shows the percentage of access to online collaboration(Figure 4).



Curriculum Tools

Curriculum tools are widely used in high school and college of education. Materials are selected and organized to facilitate class activities. Additional tools, such as discussion forums and online quizzes, are integrated to support collaboration and evaluation. Other tools include learning progress scheduling and tracking, selftesting and evaluation and even plagiarism check. A very good example for checking plagiarism in the UK universities is software called 'turn it in UK'. The level of plagiarism is checked against the accepted value.

UK universities make use of applications like the Blackboard to



Teaching Aids

Teaching aids are electronic materials and tools used to aid teaching in the classroom. These make presentation easier and more organised. Some of them include multimedia projectors and laser pointers, computers with multimedia player for instructors and simulating software's and applications. Research has however shown that electronic teaching aids help students have better grasp of concepts and ideas taught in classrooms. It also boosts student interest and attitude during learning [3].

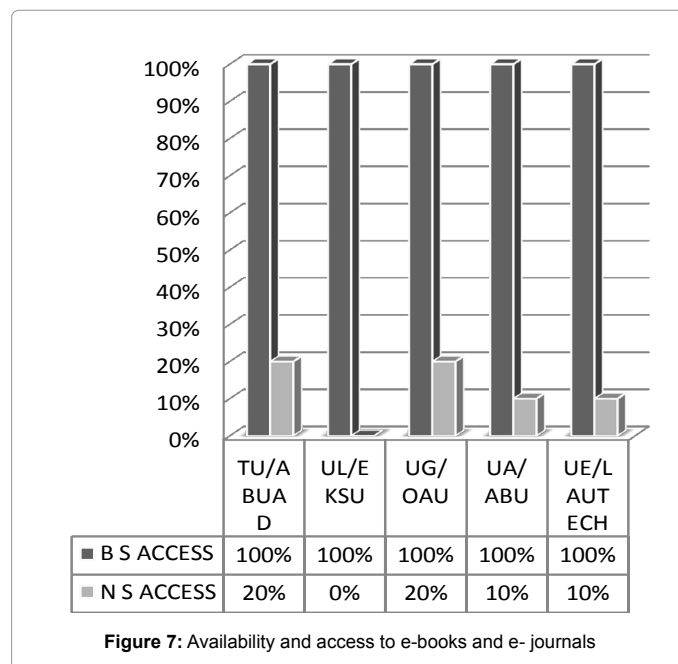
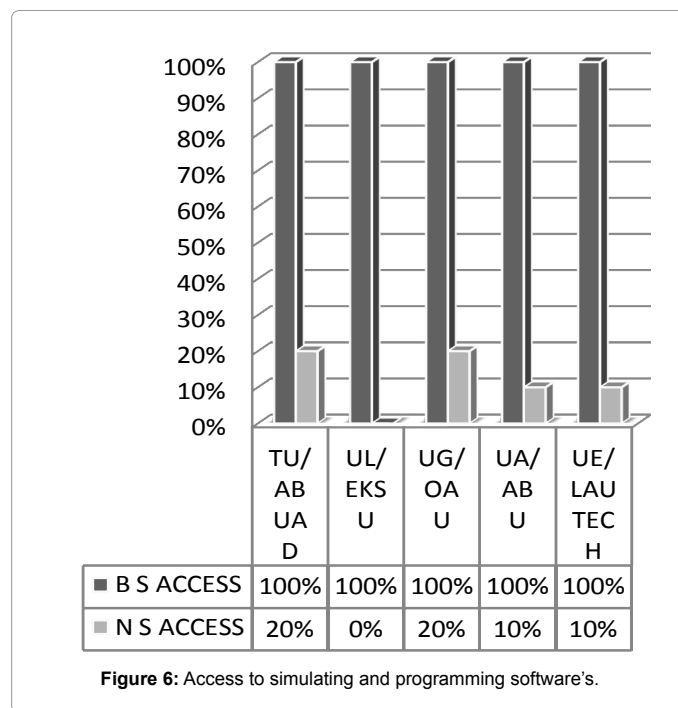
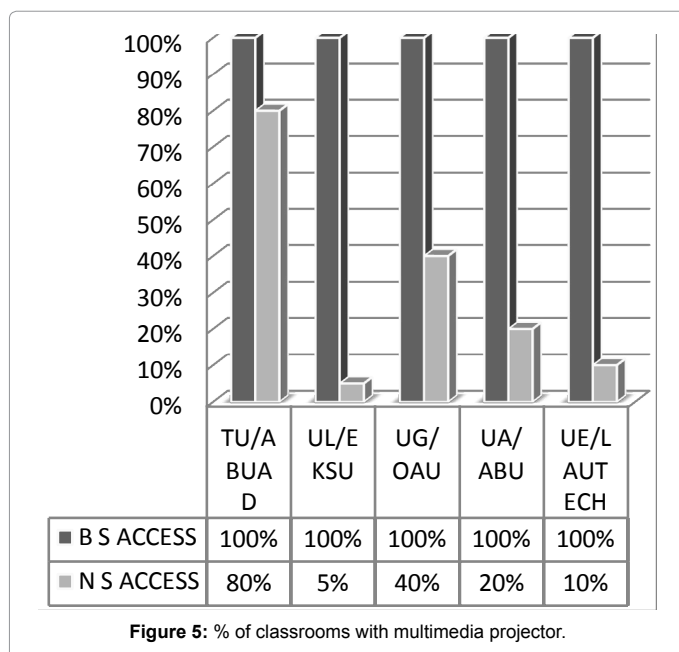
All classrooms in all universities sampled in the UK use multimedia projectors for teaching the students, the lecture rooms are also provided with computer systems with internet facility for the sole use of lecturers. Of all the universities sampled in Nigeria only ABUAD which is a private university have about 80% of its classrooms fitted with projectors and interactive boards. OAU is next with 40% to aid teaching, simulating software's and applications are also necessary. For instance in Engineering software's like MATLAB are often used for simulation to show how machines behave under certain circumstances and changing variables (Figure 5).

Most students in the UK report that all software's necessary in their courses are available on computers in the laboratory at the very least while some are available in the library. The case is not the same with Nigerian universities. The few universities in Nigeria that have some simulating software's did not obtain the necessary license. Figure 6 shows the comparison between British universities and Nigerian universities.

Library Facilities

Availability and access to E-Books and E- Journals

There is no university or academic institutions without access to reference materials and academic journals and papers. However access has moved from hardcopies to softcopies and hence the need for electronic access to such materials in the library. Universities in the UK have facilities to search for E-books and E-journals. Usernames and passwords are issued to students and they are used to access such. All the universities where research were carried out pointed out the fact that



access are even provided to other electronic journals libraries like IEEE, Science Direct and other online libraries. The graph in Figure 7 shows the level of access in both British Universities and Nigerian Universities. As shown Nigerian universities have not made any provisions for e-libraries except at ABUAD and OAU where provisions are made and efforts are being made to populate their e-library.

Online searching of library catalogue and reservation of books

“A Library catalogue is a register of all bibliographic items found in a library or group of libraries, such as a network of libraries at several

locations. A bibliographic item can be any information entity (e.g., books, computer files, graphics cartographic materials, etc.) that is considered library material” [4].

The card catalogue was a familiar sight to library users for generations, but it has been effectively replaced by the online public access catalogue (OPAC). This makes it possible to search for book and journal online and reserve the book remotely till arrival at the library. In situations where the library have the book but has been borrowed by another subscriber, OPAC makes it possible to view when the book will be available and then make reservation. Physical presence at the library is not necessary to confirm the availability of a particular library material of interest, thereby reducing time wastage.

Figure 8 shows that universities in the UK all have provisions for online searching and reservation of books. Nigerian Universities are not up to scratch about online searching of books and their reservation. ABUAD and OAU lead the pack with just 20% access.

Availability of Self Service Machine

More than ever, libraries throughout both the education and public sectors are looking for ways to make savings while maintaining and improving the service provided to users. Self service systems and other devices that communicate with the library management system.

When installed at libraries, self-service machine enable users to borrow and return items, check their account and make payments quickly and easily. Other machines can sort returned items into library specified categories, speeding up re-shelving. Self service machines operate without staff intervention enabling 24/7 service if required. (Delivering self-service transactions in libraries (no date).

As shown in Figure 9, all the British universities have service machine in their libraries. Students even indicated that they have all at one point or the other used it, indicating a 100% availability and access. Nigerian universities on the other hand have not even started looking into their use. The fact that most university library in Nigeria does not allow students to take books out of the library has partly contributed to their lethargic look into such machines. Figure 9 therefore shows 0% for all the Nigerian Universities in this aspect.

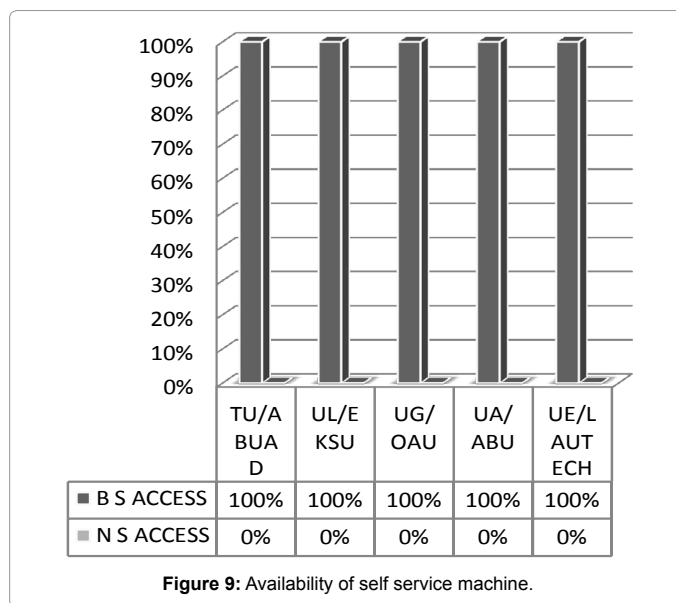


Figure 9: Availability of self service machine.

Discussion

It is obvious from the data available that the penetration and use of electronic tools in Nigerian tertiary education is still very low and in some cases near non-existent. In most tertiary institutions in the country, the fact that ICT facilities and computers are not available is worrisome. It shows that there is a long way to go. When there are no computers, or in some cases where students do not have access to the computers available, you wonder if the institution is planning to make some of these services available. For instance how do students check for the availability of textbooks online?

In the area of teaching, it is in fact very heartbreaking that most students from Nigerian institutions graduate without being taught using a projector or other multimedia tools. It is obvious that it will be difficult for the students to understand some technical graphs and diagrams, and processes that can be explained using a video.

E-learning for smart classrooms (2008) showed that “The Organisation for Economic Change and Development (OECD 2005) has identified critical factors that determine a nation’s economic growth, development and success within a globally competitive market. Outlined was the critical role ICT played in entrepreneurship, innovation and the development of social capital. The capacity of students and teachers to use (digital literacy) and apply ICT (pedagogy) will be key for economic growth and stability in the future.

Similarly, the United Nations Education, Scientific and Cultural Organisation (UNESCO) strongly emphasises the relationship between ICT use, education reform, and economic growth. This is based on assumptions that systemic economic growth is the key to poverty reduction and increased prosperity and that ICT are engines for growth and tools for empowerment with profound implications [5].

While businesses, consumers, students and organisations globally are convinced of the potential and importance of ICT, some educators are still arguing and struggling to accept and adopt learning through, and with, ICT [6-9].

Conclusion

Most tertiary institutions in Nigeria are being owned by government.

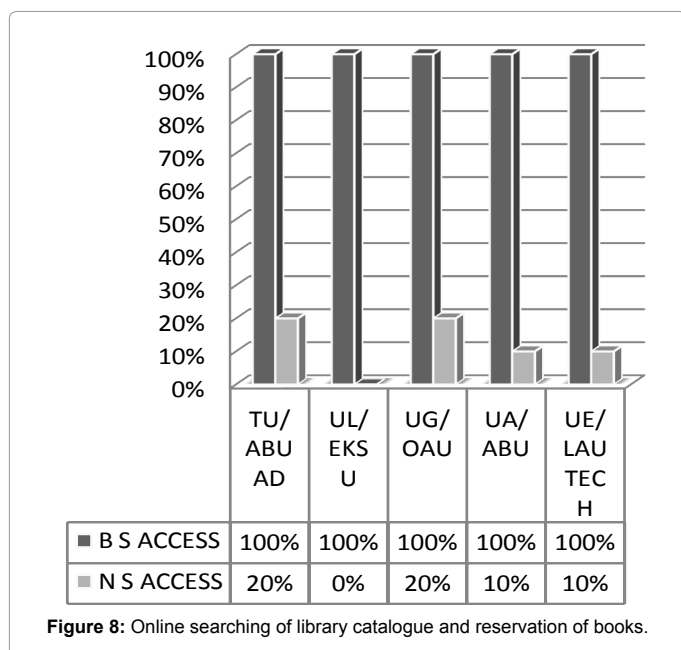


Figure 8: Online searching of library catalogue and reservation of books.

It is therefore urgently necessary for the Nigerian government to stand up to her responsibilities and found institution appropriately. In this age it is really a shame that students in some institutions graduate without even having access to computers. No wonder some graduates cannot even use computers effectively. Management of institutions should also know that most of these electronic platforms are not luxuries but necessities. They help instructors to deliver their classes in a more effective way. Time losses, paper use and loss of information are reduced to the minimum.

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